

admins may grant the "Locals" group "enabled" permission over the BookMark module. This permission ONLY applies within SiteB.

System Admin Alex requires Site B to use the MyMenu. The menu will be part of Site B's navigation tree, and Site B cannot remove it. If the Engineering group is allowed to logon to Site B, they will see the menu item "Transportation Options" because they were granted permission to see it in the system context. In addition, Site B Admins may grant the "Locals" group permission to see the menu item in the context of the site.

The act of sharing does not change existing permissions. When a component moves into a site, the site admin can control which groups may see it within their site

2.2.9 Moving Components with End User Permissions between Sites

Let's throw in SiteC to muddy the waters. In this site is the Engineering group, Local group, and Bookworm group. Also, SiteC has been shared (and is using) MyMenu and BookMark. SiteC has not granted any end user permissions.

When the Bookworm group comes to the site, they will be able to see the BookMark module, because they were granted permission in the system context. They will not see the Transportation Options page because they have not been granted permissions to see the link to Transportations Options in any context. When the Engineering group comes to the site, they will see the Transportations Option page because they were granted permission to view the link. They will not see the BookMark page. The "Locals" group will not see either the BookMark or the menu item page Transportation Options. The permissions granted in the Site B context do not apply when they are visiting Site C.

2.2.10 The Server Admin on an End User Site

The server admin can always logon to any end user site. Once they are logged on, they receive all site administration privileges. This means that, once in a site, they always get the "go to admin console for this site" link.

For end user site viewing permissions they are stripped of their server admin status. Their permissions are determined by membership in all their other groups. Often, this will mean that they aren't in any group that the site has explicitly permissioned except for the Registered Users group.

3 Import /Export of components

3.1 Overview

A web portal is composed of many "components". Examples of components are:

- The modular applications that run within the portal (called "modules" or "portlets")
- The elements that control the look, feel, and navigation of the portal (called "templates" and "styles")
- Some advanced portal systems, instead of running one portal, run multiple portals, also called "sites". These "site" components contain other components, such as modules and styles.

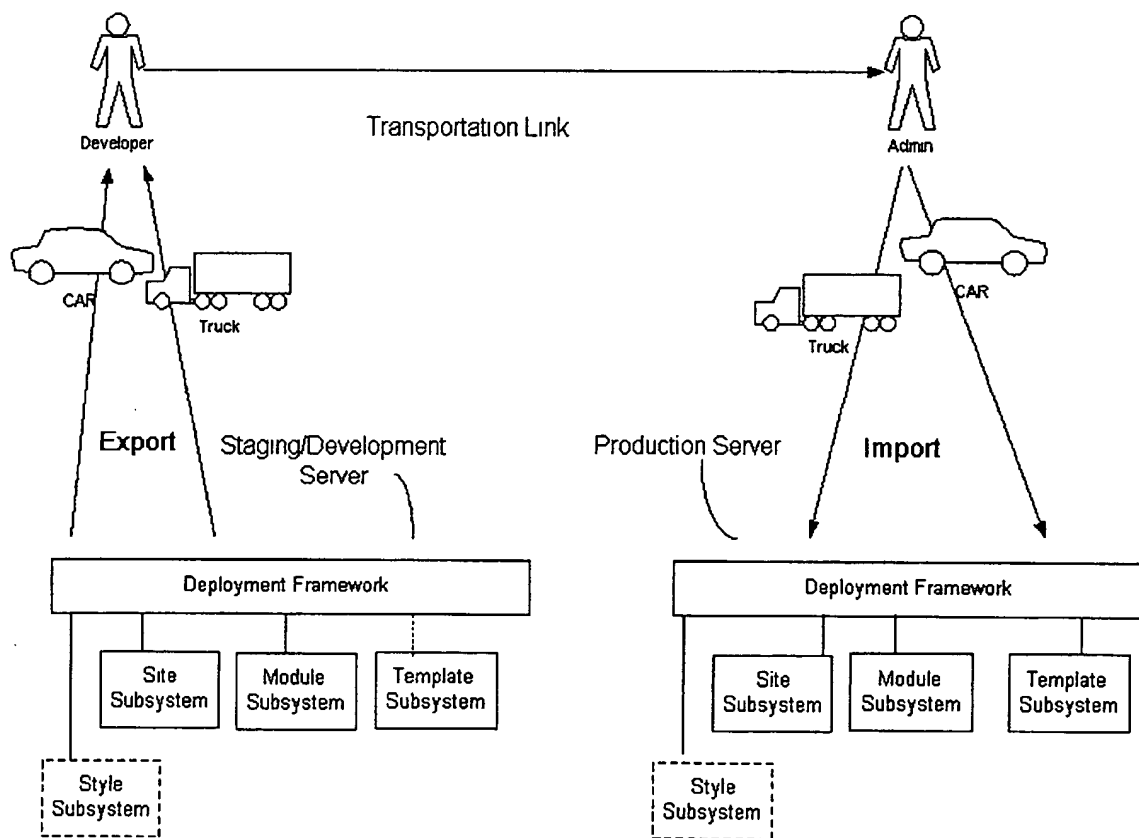
There exists a need to automate the export and importation of components from one portal to another, through a simple graphical interface. Uses of this include, but are not restricted to:

- 1) Moving components from a staging or development portal environment to a production system
- 2) Distributing components to all machines a global network of portal systems, for scalability and bringing servers closer to the people that use them
- 3) Moving components between two independent portals that happen to share some functionality
- 4) Allowing the packaging and commercial sale of these components to portals .

In the prior art many methods were used to accomplish the migration of code from the staging server to a production server. One of the prior art methods used was to physically move the files by individual manual selection or using a web application archive (WAR) file deployment. There are many drawbacks to the prior art. Selecting loose files is both cumbersome and extremely prone to error. Secondly, there is no means in the prior art to export/import components that have both file assets along with non-file assets such as database objects (permissions, user preferences, etc) and instantiated runtime objects (as opposed to static classes). In prior art, these non-file assets would then have to be manually recreated at the production server. The present invention accomplishes the above prior art drawbacks as illustrated below.

3.2 Logical Diagram

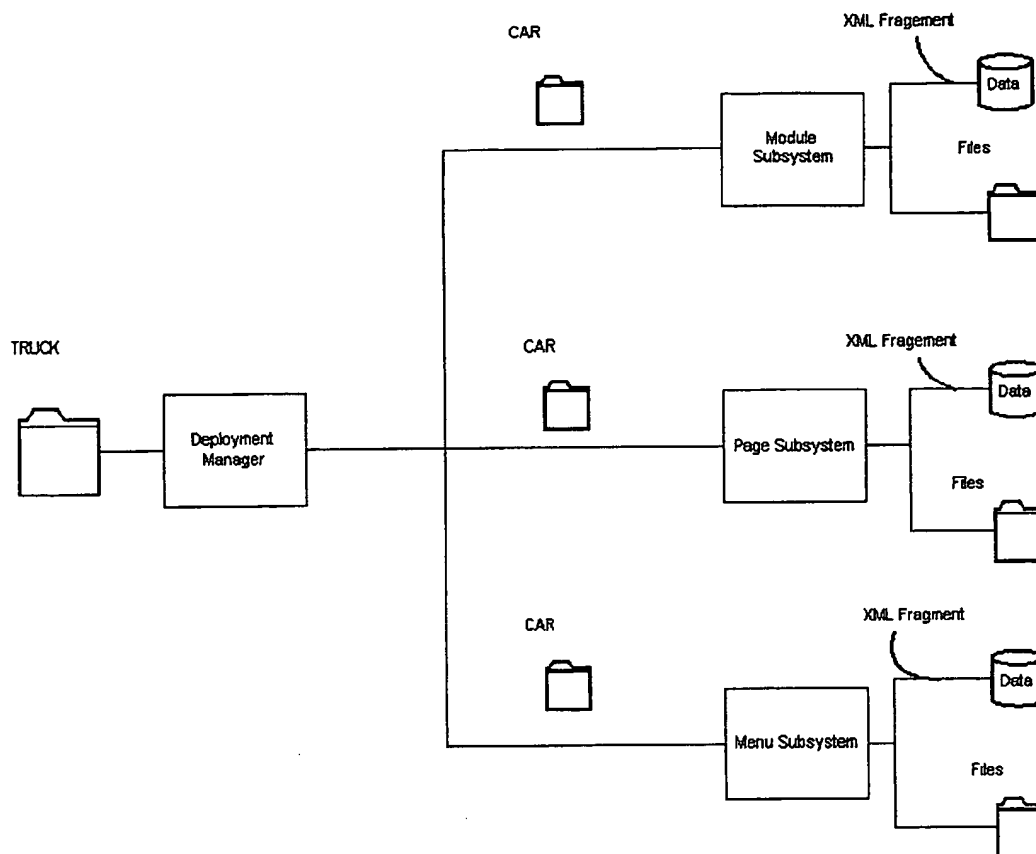
This logical diagram illustrates how customers will move from development/staging to production.



1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2

When an administrator for the site or server exports a site through the administrator graphical user interface (Admin GUI), a deployment manager API is implemented. The deployment manager acts much like a dependency sniffer, which queries every subsystem associated with the selected site or components.

A Site CAR will include all Page, Menus, Module Instances, User Groups and Themes, along with site configurations. When the Site is delivered to production, the site will be reconstructed, with all appropriate permissions and settings, and shares reestablished. The below figure illustrates a subset of subsystems that are queried by the deployment manager for the export of a selected site. Multiple sites maybe selected at one time, which in turn produces a Truck file of all the collects CARS from each selected site.



3.4 Deployment Manager/Import

When an administrator for the production server is ready to "import" the TRUCK/CAR that was downloaded to the production server. It should be noted that the IMPORT function of the deployment manager works almost in reverse of the EXPORT function that is illustrated in the above figure. The administrator selects the import link from the administrative GUI and selects the appropriate file to be "uploaded". The deployment manager then takes the relevant CAR files and extracts them. The deployment manager then examines the XML files for each extracted CAR and determines by the descriptor ID's, what the extracted component is and which subsystem that component belongs to. The subsystem then takes the particular component files, extracts them to the appropriate location in the file system. The XML fragment is then parsed and the objects contained therein are instantiated in the database or other relevant location. The deployment manager eliminates the need for the administrator to hand deliver files to the correct location on the file system and to reset all of the permissions, settings, etc. that was done on the staging server. Plus, the production system does not need to be restarted, therefore resulting in a significant loss of downtime for the server..

3.5 Import/Export of Shared Components

When a site is exported, it takes with it all objects that have been shared to it. If donor sites do not exist on the target installation, these objects revert to System ownership. Even when the donor site is imported, these objects will still have system ownership. Therefore, admins should import and export sites that are net donors first, and then net recipients.

3.6 Versioning

The system will support both major and minor version numbers. However, each version can only have one build. For example, the software residing on the server will support having minor version 1.2 build 5, minor version 1.3 build 6 and major version 2.0 build 1. But if the user tries to upload 2.0 build 2, it will overwrite the existing 2.0. In addition, if they have 3.4 build 1 and reimport 3.4 build 1, the existing CAR will be replaced with the incoming CAR, and the site will be overwritten with the newer CAR. The deployment framework will keep all CAR versions that are imported into the system. When a new site CAR is uploaded to the system, the system will deploy the site CAR only if it is

- a) the same version (major and minor) and build number as the current site or
- b) a larger version or build number than the current site.

The largest version number will always be the deployed site. In addition, when a site is deleted, all versions of the site CAR should also be deleted from the system. The version number will not be exposed or manipulated through the User Interface. When an administrator exports a site, if there is no version number, the system automatically assigns it a version number of 1.0

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4 Glossary

4.1 Site

A site is considered to be a collection of administrable objects (modules, pages, users, etc) given a single identity by a shared look-and-feel, a shared set of navigation links, and an administrative group that automatically receives permissions to administer all or nearly all of the objects within the site.

4.2 Referring Site

This is the site that is the referrer to the admin site. A admin user must first choose a site to login to, and then click through to the admin site via the dynamic "Administration" link.

4.3 Site Admins (members of the Site Administration group)

Site admins are members of the Site Administration group for a site. A site administration group is a usergroup that is automatically created whenever a user creates a new site. Site admin groups are inextricably linked to sites; a site admin group will exist as long as its site exists.

Site admins are like server admins for a single site. Members of a site admin group for a site will be the most powerful administrators of that site. Less powerful site administrators should be placed into other groups that have limited delegated administrative privileges on a site – they should not be placed in the site admin group.

4.4 Server Admins

Server admins are installation-level administrators who have complete privileges over all aspects of an installation. The server admin setting is a per-user setting that entirely bypasses all system permissions, effectively giving server admins all permissions in the system.

4.5 The Everyone Group

This is a special conceptual group which allows batch permissions to be set for all groups. It isn't an actual group but rather a flag that lives on every permission which short-circuits the group-based permissions lookup.

4.6 Site Repository

Every site in an installation has a single site repository. The site repository is used to store all items (modules, templates, pages, etc.) that are available to be used on a site. Administrators of a particular site will, by default, have permission to view and modify the contents of their site's site repository. The act of adding an item into a site's repository automatically causes that object to be permissioned so that the site's site admins will have permission to administer the object.

In addition to providing for automated permissioning of these objects, the site repository also provides for site-based grouping, or partitioning. The site repository can constrain the views of site administrators to only those objects that the repository contains. This provides a security model for delegated site admins that enables different site admin groups to potentially use completely different sets of objects for building and administering their sites.

4.7 Site Context

An delegated admin will be able to perform various actions in one of three contexts: in the context of a particular site, in the context of the shared repository, or in the system context.

If a user is working in the context of a particular site, then the actions that he or she takes when in that context will pertain to that site. For example, if a user is working within the context of SiteX, and that user creates a module, then the module will automatically go into the SiteX repository.

4.8 Shared Repository

The *shared repository* is a collection of items in the system that are available to be used on multiple sites. A single item can be placed in any number of repositories (site, shared, or system), or in no repositories at all. All the objects that can be placed in a site repository (listed above) can also be placed in the shared repository for the purposes of sharing.

4.9 System Repository

The *system repository* is the system-wide view of all items that a user has permission to see, regardless of what repositories those items are in.

4.10 System Context

Uber and delegated admins will be able to work in a context called the system context. In this context, the server admin will have access to all objects in the system, and delegated admins will have access to all objects in the system that they have permission on.

4.11 The XML-based Sites Utility

Administrates sites outside the limitations of the web-based admin UI with a flexible, powerful, XML-based sites utility. Copies sites from one 4.0 installation to another. Also can be used to archive sites to disk.

3.12 Deployment Framework

This is the software framework that manages and records the deployment state of components in the system, throughout the deployed cluster.

3.13 CAR

Zip Format File. Component Archive. Contains resources which can be deployed

3.14 TRUCK

A CAR file that contains other CAR files.